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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/578,627 05/24/00 BENFEY

P 5914-078-999

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 EXAMINER

PENNIE & EDMONDS LLP  
1155 AVENUE OF THE AMERICAS  
NEW YORK NY 10036-2711

COLLINS, C

 ART UNIT PAPER NUMBER

1638

DATE MAILED:

09/17/01

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/578,827

Applicant(s)

BENFEY ET AL.

Examiner

Cynthia Collins

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 24 May 2000.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) \_\_\_\_\_ is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) 1-29 are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_

4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 20 is objected to. Claim 20 is drawn to the transgenic plant of claim 17. In the transgenic plant of claim 20, cell division is decreased in the roots resulting in thinner root development, yet in the transgenic plant of claim 17, cell division is increased in roots resulting in thicker root development. It is apparent that claim 20 was meant to depend on a claim other than claim 17.
2. Claim 23 is objected to. Claim 23 is drawn to the transgenic plant of claim 21 in which the gene of interest encodes a gene product that confers herbicide, salt, pathogen, or insect resistance, yet the transgenic plant of claim 21 is a genetically engineered plant in which the endogenous SHORT-ROOT gene is disrupted or inactivated. It is apparent that claim 20 was meant to depend on a claim other than claim 17.
3. The inclusion of claim 20 in Group V and of claim 23 in Group VII is in the interest of compact prosecution, and does not relieve the Applicants of their responsibility to respond to these objections. Appropriate correction is required.

### ***Election/Restrictions***

4. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-10, 16-19, and 26, drawn to an isolated nucleic acid molecule that encodes a short-root protein, a vector, a genetically engineered cell, a method for producing a SHORT-ROOT polypeptide, a plant genetically engineered to overexpress a SHORT-ROOT protein or polypeptide, a transgenic plant, classified in class 536, subclass 23.6, for example.

- II. Claims 11-13, drawn to an isolated SHORT-ROOT polypeptide, classified in class 530, subclass 370, for example.
- III. Claim 14, drawn to an antibody that immunospecifically binds a SHORT-ROOT polypeptide, classified in class 530, subclass 387.1, for example.
- IV. Claim 15, drawn to an anti-idiotypic antibody that mimics an epitope of a SHORT-ROOT protein, classified in class 530, subclass 387.2, for example.
- V. Claims 16, 20, and 26, drawn to a plant genetically engineered to underexpress a SHORT-ROOT protein or polypeptide, and to a transgenic plant in which the transgene encodes an antisense nucleotide sequence that suppresses expression of endogenous SHORT-ROOT gene product, classified in class 800, subclass 298, for example.
- VI. Claims 16, 21, and 26, drawn to a plant genetically engineered to underexpress a SHORT-ROOT protein or polypeptide, and to a genetically engineered plant in which the endogenous SHORT-ROOT gene is disrupted or inactivated, classified in class 800, subclass 298, for example.
- VII. Claims 22-25 and 27, drawn to a transgenic plant containing a transgene encoding a gene of interest operatively associated with a SHORT-ROOT promoter, classified in class 800, subclass 300, for example.
- VIII. Claim 28, drawn to a method for identifying a compound which modulates expression of a SHORT-ROOT, classified in class 435, subclass 7.1, for example.

IX. Claim 29, drawn to a method for identifying a test compound capable of modulating root or shoot-specific gene expression, classified in class 435, subclass 8, for example.

5. The inventions are distinct, each from the other because of the following reasons:
6. The inventions of Groups I-VII are distinct products because they are structurally and functionally distinct from each other, and can be used in different methods. The isolated nucleic acid molecules and genetically engineered cells of Group I, the isolated SHORT-ROOT polypeptide of Group II, the antibody of Group III, and the anti-idiotypic antibody of Group IV are structurally and functionally distinct from each other, and can be used in different methods, such as a method for producing a recombinant protein, a method for producing antibodies, a method for detecting proteins, and a method for inhibiting protein function, respectively. The transgenic and genetically engineered plants of Groups I and V-VII are also structurally and functionally distinct from each other, and can be used in different methods, such as different methods of breeding for specifically altering different plant phenotypes, such as altered root development, increased stress tolerance, increased macromolecule biosynthesis, and altered gravitropism.
7. The inventions of Groups I and VIII-IX are also distinct methods because each method requires different method steps and different starting components, and each results in the production of structurally distinct products. The method of Group I is distinct from the methods of Groups VIII-IX because it results in the production of a polypeptide and requires the expression of a nucleic acid molecule encoding a short-root protein, which is not required by the methods of Groups VIII-IX. The method of Group VIII identifies a compound that is capable of

modulating the expression of a gene product and requires the use of a cell that expresses SHORT-ROOT, which is not required by the method of Groups IX. The method of IX identifies a compound that is capable of modulating expression of a gene and requires the use of a reporter gene under the control of a SHR regulatory region, which is not required by the methods of Groups I and VIII.

8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, their recognized divergent subject matter, and the requirement for different areas of search, restriction for examination purposes as indicated is proper.

9. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Remarks***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Hutzell can be reached on (703) 308-4310. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and 1 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC

September 13, 2001

ELIZABETH F. McELWAIN  
PRIMARY EXAMINER  
GROUP 1600

